Java programming language was originally developed by Sun Microsystems.Java is an object oriented language.

**Java Features:**

* Java is an object oriented language.
* It is familiar to C and C++.
* Java is designed to be easy to learn.

**Java program Lifecycle:**

Java programs normally undergo four phases

– Edit

• Programmer writes program (and stores program on disk)

– Compile

• Compiler creates byte codes from program (.class)

– Load

• Class loader stores byte codes in memory

– Execute

• Interpreter: translates byte codes into machine language

**Java Virtual Machine(JVM):** This is generally referred to as [JVM](https://www.geeksforgeeks.org/jvm-works-jvm-architecture/#:~:text=JVM(Java%20Virtual%20Machine)%20acts,(Write%20Once%20Run%20Anywhere).). There are three execution phases of a program. They are written, compile and run the program.

Writing a program is done by a java programmer like you and me.

The compilation is done by the **JAVAC** compiler which is a primary Java compiler included in the Java development kit (JDK). It takes Java program as input and generates bytecode as output.

In the Runningphase of a program,**JVM** executes the bytecode generated by the compiler.

**OOPS:**

A **Class** is like an object constructor, or a "blueprint" for creating objects.

An object is an instance of class.

**Encapsulation**

• Hiding the irrelevant information

– Class

• State & Behavior

– Access Specifiers

• Private

– Hides the implementation details of a class

– Forces the user to use an interface to access data

– Makes the code more maintainable

• Abstraction means to show only the necessary details to the client of the object.

– Public methods – Perspective based Abstraction

Polymorphism

• Taking multiple forms – Compile time Polymorphism

• Over Loading – Runtime Polymorphism

• Overriding

Inheritence

It adds feature like code reusability.In the concept of inheritence we have a parent class and a child class which inherits the features of parent class.

**Software development life cycle:**It tells about the steps which are to be proceeded while devoloping a software.The steps involved in SDLC are:

1. Requirement analysis
2. Design
3. Implementation
4. Testing
5. Deplyment and Maintainence

**Models of SDLC:**

1. Water Fall
2. Agile
3. Devops